



SNMP-32 Series

(Web-based monitoring SNMP card)

User's Manual

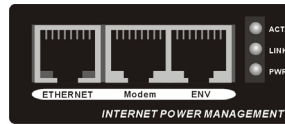
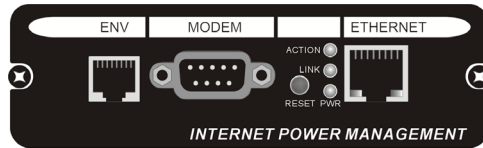


Table of Contents

Notice.....	3
1. Introduction	4
1-1. Features.....	4
1-2. Package Contents	5
1-3. Applications.....	6
2. Installation Procedure.....	7
3. Setup Procedure.....	8
4. Web Management Interface.....	10
4-1. Main Menu	10
4-2. Information: System Status.....	11
4-3. Configuration: Network	11
4-4. Configuration: SNMP.....	12
4-5. Configuration: Email	14
4-6. Configuration: PPP.....	15
4-7. Configuration: Web/Telnet.....	15
4-8. Configuration: System Time	16
4-9. Log Information: Event	16
4-10. Log Information: Data	18
5. Firmware Upgrade Procedure.....	19
6. Telnet	21
6-1. Telnet Configuration	21
7. Connected Device	23
7-1. Uninterruptible Power Supply (UPS)	23
7-2. Remote Power Manager (RPM).....	29
7-3. Current Probe Sensor (CPS)	32
7-4. Temp/Hum32-Probe (ENV).....	33
7-5. Automatic Transfer Switch (ATS).....	34
8. Configuring the NMS.....	35
9. Appendix.....	36
10. Troubleshooting.....	38
11. Obtaining Technical Assistance.....	39
12. Limited Product Warranty	40

Notice

This equipment has been tested and found to comply with the limits for a "Class A" digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

This digital apparatus does not exceed the "Class A" limits for radio noise emissions from digital apparatus set out in the Radio interference regulations of the Canadian Department of Communications.

Trademarks

MINUTEMAN is a registered trademark of Para Systems, Inc. All other trademarks are the property of their respective holders.

Conventions used in this guide

This guide uses these conventions:

Bold italic print, as shown in this example, indicates field names, menu items, or values in the SNMP-32 Card software agent.

Bold print, as shown in this example, indicates filenames, directories, or items that you must type exactly as they appear.

Italic print words or letters in braces { } indicate values that you must supply. For example: *{drive}:\setup*

Italic print words or letters in brackets < > indicate keys to press. If two keys are separated by a + plus symbol, then the first key should be pressed and held down while pressing the second key. For example: *<alt+enter>*.

Note: Notes contrast from the text to emphasize their importance.

Warning: These messages alert you to specific procedures or practices; serious consequences may result including injury if you disregard them.

1. Introduction

A UPS can be configured with either an internal or an external SNMP-32 card; this SNMP-32 card is then connected to the network. The SNMP-32 card contains a MIB agent. The agent communicates both solicited and unsolicited messages to the Network Management Station (NMS). Unsolicited messages are defined by the MIB and are built into the agent for critical items such as AC power failure and low battery detection. The agent recognizes these critical events and immediately forwards them to the Network Management Station. The network manager will immediately notice the alarm and the flashing icon of the SNMP-32 card. By clicking on the icon, you will be able to see the alarm messages. If nobody is present, the Network Management Station will shutdown the programs, the OS server and eventually the UPS safely.

1-1. Features

The SNMP-32 card connects directly to your UPS. It runs an embedded Simple Network Management Protocol (SNMP) software agent. This agent responds to SNMP GETS and SETS and also forwards traps to designated recipients when critical conditions occur within the UPS, such as the UPS going on battery backup mode during a power failure.

The SNMP-32 card features:

- **Internet ready** — It supports TCP/IP, UDP, SNMP, Telnet, SNTP, PPP, HTTP and SMTP protocols. The user can use a SNMP manager or a Web browser to monitor the UPS through a network.
- **Multiple OS support** — As long as there is Network Management software present.
- **Remote setup support** — Once an IP address is assigned the rest can be setup remotely through Telnet or a Browser.
- **Remote monitoring** — Monitors the status of one UPS from a remote workstation (Web browser or NMS).
- **Remote Control** — Turns the UPS off (or a battery test) when the NMS sends the proper command.
- **NMS To Receive UPS Alarms** — These traps (unsolicited messages) inform the user about the power condition of the connected UPS.
- **Works with most major NMS on Ethernet** — SNMP-32 card works with the most widely used Network Management Systems: HP Open View, Sun NetManager, IBM NetView, and many more.
- **Remote Software upgrade** — The SNMP-32 card supports Software upgrade through the Ethernet remotely.
- **Daily historical reports** — Automatically emails daily history reports to the specified users.
- **Auto-Sense** — Auto-Senses 10/100M Ethernet.
- **Event Notifications** — Sends both SNMP Traps and Emails for event notification.
- **3-Ports** — Environmental Monitoring (Optional Kit), External Modem, and Ethernet.

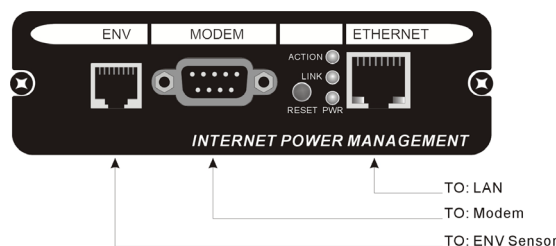


Fig. 1-SNMP-32L Card

ENV port — The connection for a Temperature/Humidity Probe

Modem port — The connection for an External Modem

Reset Button — The Reset Button is used to reset the SNMP-32 card

Status LEDs — See the Status LED Table below

Ethernet port — The connection for the LAN

LAN Port LEDs — See the LAN Port LED Table below

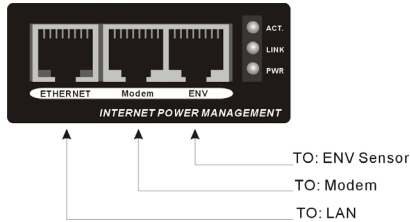


Fig. 2-SNMP-32S Card

Ethernet port — The connection for the LAN

LAN Port LEDs — See the LAN Port LED Table below

Modem port — The connection for an External Modem

ENV port — The connection for a Temperature/Humidity Probe

Status LEDs — See the LED Table below

Status LED Table			
Yellow	Red	Green	Status
OFF	OFF	Solid ON	Power ON
Flashing	Solid ON	Solid ON	System initial
Solid ON	OFF	Solid ON	Normal operation
Solid ON	Flashing	Solid ON	No connection to UPS
Flashing	Flashing	Solid ON	Writing data to flash memory
Green LED (PWR): Power state			
Red LED (Link): Correspondence state with UPS			
Yellow LED (Action): Correspondence state with the Network			

LAN Port LED Table		
Yellow	Green	Status
OFF	Solid ON	Network Connectivity speed is 100M
OFF	Flashing	Transmitting data
Solid ON	OFF	Connectivity speed is 10M
Flashing	OFF	Transmitting data
Green LED (Connectivity): 100M		
Yellow LED (Connectivity): 10M		

1-2. Package Contents

Internal SNMP-32 card Package Contents

The contents of the package are:

<input type="checkbox"/> SNMP-32 Card
<input type="checkbox"/> RJ11 to RS232 Serial Cable (SNMP-32S) for external modem only
<input type="checkbox"/> CD

The CD contains a Quick Install Procedure, SNMP Utility software, MIB files: dgpuups.mib supports UPS, dgprpm.mib supports RPM, ENV, CPS and ATS, Acrobat Reader and the User's Manual. Copy the MIB file to the appropriate NMS MIB directory for the UPS connected to your SNMP-32 card.

External SNMP-32 card Package Contents (SNMP-32L Only)

The external adaptor is used to connect the SNMP-32L card to the UPS, when the UPS does not have an option slot. The contents of the package are:

<input type="checkbox"/> External Adaptor Box
<input type="checkbox"/> Power Adaptor
<input type="checkbox"/> DB9 Male-to-Female Serial Cable
<input type="checkbox"/> SNMP-32 Card
<input type="checkbox"/> CD

1-3. Applications

SNMP-32 card and the UPS

A UPS can be configured with either an internal or an external SNMP-32 card; then it is connected to the network. The SNMP-32 card contains a MIB agent. The agent communicates both solicited and unsolicited messages to the Network Management Station (NMS). Unsolicited messages are defined by the MIB and are built into the agent for critical items such as AC power failure and low battery detection. The agent recognizes these critical events and immediately forwards them to the Network Management Station. The network manager will immediately notice the alarm and the flashing icon of the SNMP-32 card. By clicking on the icon, you will be able to see the alarm messages. If nobody is present, the Network Management Station will shutdown the programs, the OS server and eventually the UPS safely.

SNMP-32 card and the RPM (Remote Power Manager)

When the RPM is connected to the network with the SNMP-32L card, the system manager could check each device's condition via a Web Browser. The manager could monitor and control the devices by simply inputting the IP address of the SNMP-32L card. When there is an abnormal power condition the SNMP-32L card will send the trap information to the system manager, and then the system manager can take the appropriate action.

SNMP-32 card and the ATS (Automatic Transfer Switch)

An ATS can be configured with the SNMP-32 card; then it is connected to the network. The ATS is an Automatic Transfer Switch with redundant input sources. The ATS can be viewed and controlled via a Web Browser.

SNMP-32 card and the CPS (Current Probe Sensor)

The CPS and the SNMP-32 card can be used to monitor the current (Amps) of 16 devices. The information can be view via a Web Browser.

SNMP-32 card and the ENV (Environmental Monitoring)

A Temperature/Humidity Probe can be connected to the SNMP-32 card to monitor the temperature and humidity of the surrounding environment. The SNMP-32 card is then, connected to the network to view the environmental conditions via a Web Browser. When an abnormal condition occurs, a trap can be sent to the system manager and activated some pre-set action configured by administrator.

2. Installation Procedure

This section will guide you through installing the Internal and the External SNMP-32 card.

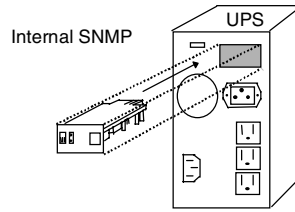


Fig. 3-Internal SNMP-32 Card

Internal SNMP-32 card

NOTE: The SNMP-32 cards are designed to be Hot Swappable, but there is a remote chance that when Hot-Swapping the SNMP-32 card that the UPS will shutdown. MINUTEMAN recommends following steps 1 through 9 when installing the SNMP-32 card, but to hot-swap, skip to step number 3 and omit steps 7, 8.

1. Turn off all the equipment that is plugged into the UPS.
2. Turn off the UPS and unplug the UPS's power cord from the AC wall outlet.
3. Remove the two retaining screws from the option slots cover plate (rear panel of the UPS).
4. Remove the option slot's cover plate (rear panel of the UPS).
5. Insert the SNMP-32 card into the option slot and re-install the two retaining screws.
6. Connect the Ethernet cable to the Ethernet Port on the SNMP-32 card.
7. Plug the UPS's power cord into the AC wall outlet and turn the UPS on.
8. Turn on all the equipment that is plugged into the UPS.
9. Now the SNMP-32 is ready to be Setup (see the Setup Procedure).

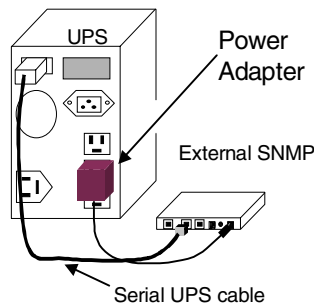


Fig. 4-External SNMP-32 Card (SNMP-32L Only)

External SNMP-32 card (SNMP-32L Only)

NOTE: The SNMP-32 cards are designed to be Hot Swappable, but there is a remote chance that when Hot-Swapping the SNMP-32 card that the UPS will shutdown. MINUTEMAN recommends following steps 1 through 11 when installing the SNMP-32 card, but to hot-swap, skip to step number 3 and omit steps 9, 10.

1. Turn off all the equipment that is plugged into the UPS.
2. Turn off the UPS and unplug the UPS's power cord from the AC outlet.
3. Plug the power adaptor's connector into the connector on the external adaptor box, labeled "Input".
4. Plug the DB9 Male to Female cable into the connector on the external adaptor box, labeled "To UPS".
5. Plug the other end of the DB9 Male to Female cable into the Serial Port on the UPS (rear panel of the UPS).
6. Plug the power adaptor into one of the Battery Powered outlets of the UPS.
7. Insert the SNMP-32 card into the option slot and install the two retaining screws.
8. Connect the Ethernet cable to the Ethernet Port on the SNMP-32 card.
9. Plug the UPS's power cord into the AC wall outlet and turn the UPS on.
10. Turn on all the equipment that is plugged into the UPS.
11. Now the SNMP-32 card is ready to be setup (see the Setup Procedure).

3. Setup-Procedure

This section will guide you through the Setup-Procedure of the SNMP-32 Card.

NOTE: The minimum requirement to operate the SNMP-32 Card is to setup the IP Address. The SNMP Utility supports most Windows Operating Systems (98, 2000, XP).

1. Load the SNMP Utility CD into the CD-ROM drive, and then open the 'Install SNMP Utility'.
2. Once the installation is complete, there will be a 'SNMP Utility' group in the Windows 'Start' → 'Program Group'.
3. Click the "SNMP Utility" to initiate the SNMP Utility program (Fig. 5).



Fig. 5-SNMP Utility Group

4. Once the SNMP Utility is open, the SNMP Utility will search for the network adapter automatically, or, click on Network Selection from the main page. The screen will display the network adapter that was located. Click on the network adapter, and then press "OK" to return to the main page of SNMP Utility (Fig. 6).

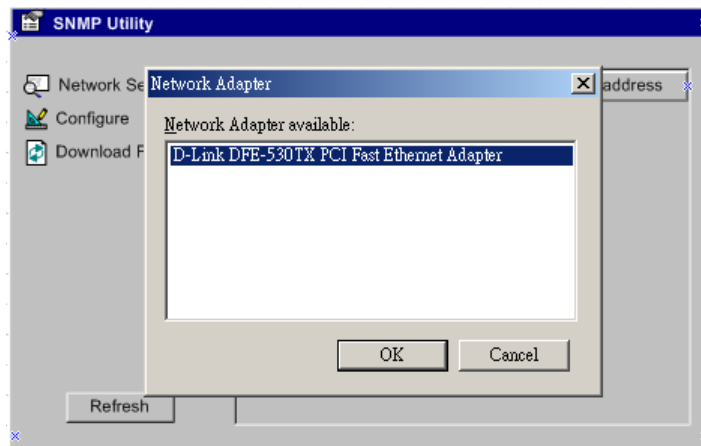


Fig. 6-SNMP Utility: Network Selection

5. The SNMP Utility will then search for and display all of the SNMP-32 cards that are on your LAN. Select the appropriate SNMP-32 card on the right side of the screen, and then click "Configure" or double click on the appropriate SNMP-32 card to open the Configuration Menu (Fig. 7).

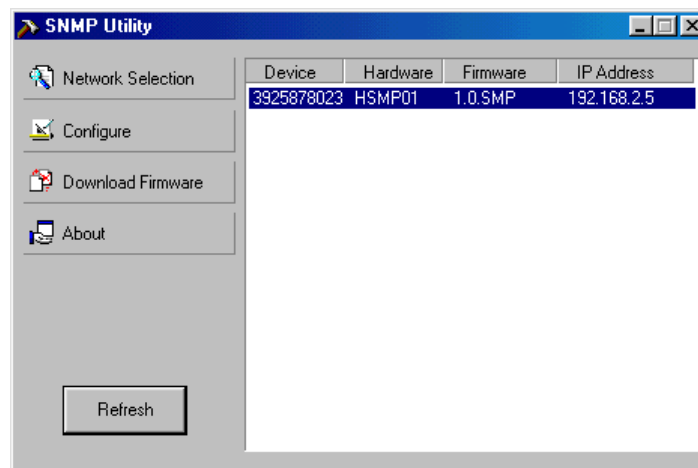


Fig. 7-SNMP Utility: Configuration Menu

6. Enter the IP address; the subnet mask and the gateway, then click OK or use DHCP or use BOOTP (Fig. 8).

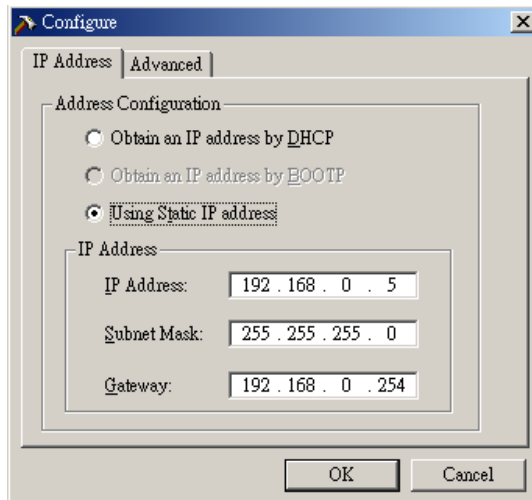


Fig. 8-SNMP Utility: Set IP address for SNMP-32 card

7. There are two Security features for the SNMP-32 card (Fig. 9):

A. SNMP Utility Password (Not required):

Once the password is entered, the SNMP-32 card cannot be accessed without the correct password.

B. Management Protocol (Not required):

The HTTP port and the Telnet port can be changed for security purposes. When the HTTP port or the Telnet port is changed, then the full IP address must be entered to access the SNMP-32 card.

Example:

Change the HTTP port to 81, and then you must enter the IP address (192.168.0.5:81) to access the SNMP-32 card.

Change the Telnet port to 24, and then you must enter the IP address (192.168.0.5:24) to access the SNMP-32 card.

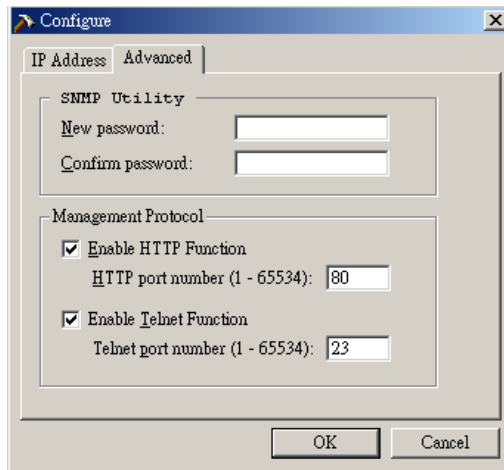


Fig. 9-SNMP Utility: Advanced setting of SNMP-32 card

4. Web Management Interface

Once the SNMP-32 card installation and set-up procedure is complete, you are now able to monitor and control the SNMP-32 card via a Web Browser.

1. Open a Web Browser (Netscape, Internet Explorer, Opera, Mozilla).
2. Enter the SNMP-32 card's IP Address.
3. Enter the User Name and the Password (Not required). If a User Name or a Password was not entered in the Set-Up Procedure, then click OK (Fig. 10).

NOTE: There is no default User Name or Password.

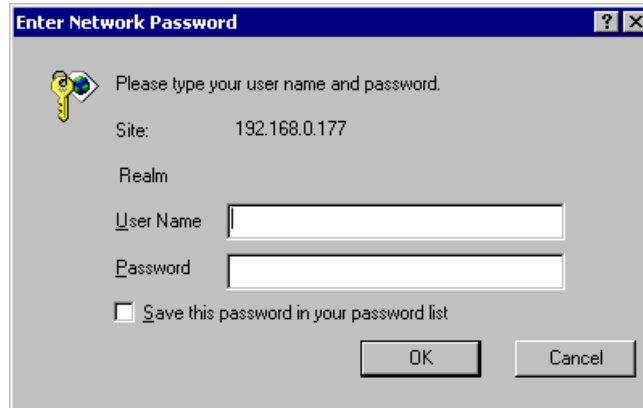


Fig. 10-SNMP-32 card: Login Screen

4-1. Main Menu

On the left hand-side of the Main Menu, there are four categories (Fig. 11):

1. **Information:**
Provides the information about the connected Device.
2. **Configuration:**
Configure the network and devices setting.
3. **Log Information:**
Record the events and data that is generated by device.
4. **Device selection:**
Select the device to monitor and control, including the UPS, RPM, CPS, ENV and ATS.

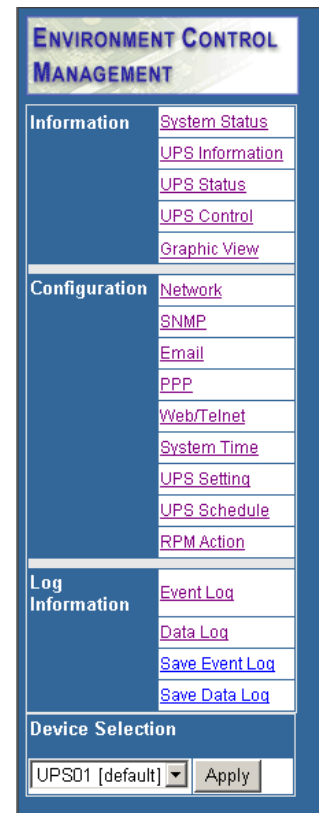


Fig. 11-Main Menu Screen

4-2. Information: System Status

This screen shows the SNMP-32 card's System Information and Network setting (Fig. 12). The information shown is provided by SNMP-32 card or it is the user settings from the SNMP Utility Configuration pages.

1. System Information:

This section shows the System Information. The Firmware Version, the Serial Number and the System Time are provided by SNMP-32 card. The other information is the user settings from the SNMP Utility Configuration pages.

2. Network Status:

This section shows the Network settings. The MAC address is provided by SNMP-32 card. The other information is the user settings from the SNMP Utility Configuration pages.

System Status	
System information	
Firmware Version	1.0.SMP
System Name	SNMP32V Agent
System Contact	Administrator
Location	Office
System Time	06/18/2003 16:42:34
Uptime	23:59:57
Network Status	
MAC Address	00:03:EA:00:1D:8A
Connection Type	Auto Sense
IP Address	192.168.0.5
Subnet Mask	255.255.255.0
Gateway	192.168.0.254
Email Server	
Primary DNS Server	
Secondary DNS Server	
Primary Time Server	128.118.46.3
Secondary Time Server	128.250.36.2
PPP Server	10.0.0.1
Login IP	10.0.0.2

Fig. 12-System Status Screen

4-3. Configuration: Network

This screen is to set the Network settings (Fig. 13).

NOTE: SNMP-32 card will reboot after making changes to any of the following sections.

1. IP Address:

This section is to set the IP address.

2. Subnet Mask:

This section is to set the Subnet Mask.

3. Gateway:

This section is to set the Gateway.

4. Obtain an IP address:

This section is to choose to set the IP address manually or via DHCP.

NOTE: The four sections above can be set in either the SNMP Utility or the SNMP-32 card's Web pages.

5. Primary DNS Server IP:

This section is to set the Primary DNS Server IP address.

6. Secondary DNS Server IP:

This section is to set the Secondary DNS Server IP address. SNMP-32 card will use the Secondary DNS Server IP address when the Primary DNS Server IP address is not working.

7. Ethernet Connection Type:

This section is to set communication speed of the SNMP-32 card.

Network	
IP Address *	
IP Address	<input type="text" value="192.168.2.41"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="192.168.2.254"/>
Obtain an IP Address*	<input type="text" value="By manual"/>
DNS Server IP	
Primary DNS Server IP	<input type="text" value="192.168.0.1"/>
Secondary DNS Server IP	<input type="text"/>
Ethernet	
Connection Type*	<input type="text" value="Auto Sense"/>
* : Modify the items will cause SNMPV to reboot.	
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

Fig. 13-Network Screen

4-4. Configuration: SNMP

This screen is to set the SNMP settings so that the SNMP-32 card will work with an NMS (Network Management System: SNMPC, HP OpenView or most major NMS) (Fig. 14).

1. MIB System

- A. System Name:
This section is to input a name for the SNMP-32 card.
- B. System Contact:
This section is to input the name of the administrator.
- C. System Location:
This section is to input the name of the location of the SNMP-32 card.

2. Access Control

- A. Manager IP Address:
This section is to set the IP address that the administrator can manage SNMP-32 card from the specific IP address. It is valid for up to eight IP addresses. *.*.* is the default setting without any access restriction for the IP.
- B. Community:
This section is to set a Community name for NMS. The community name has to be the same as the setting in NMS.
- C. Permission:
This section is to set the authorities of the administrators. Options are Read, Read/Write, and No Access.
- D. Description:
This section is for an administrator to make notes.

3. Trap Notification

A. Receiver IP Address:

This section is to set the receivers IP address for receiving traps sent by SNMP-32 card. It is valid for up to eight IP Addresses.

B. Community:

This section is to set a Community name for NMS. The community name has to be the same as the setting in NMS.

C. Severity:

This section is to set the Trap receiver levels. There are three levels for the Trap receiver:

- Information: To receive all traps.
- Warning: To receive only “warning” and “severe” traps.
- Severe: To receive only “severe” traps. (Please refer to NMS User’s Manual for Trap levels).

D. Acceptance:

This section is for authorizing the receiver to receive a trap or not.

E. Description:

This section is for an administrator to make notes.

F. Events (Fig. 15):

This section is to select events for SNMP-32 card to send traps. Clicking on Select will open a Select Events List. Event Traps may be selected from this list.

SNMP					
MIB System					
System Name	SNMP Agent				
System Contact	Administrator				
System Location	Office				
Access Control					
Manager IP Address	Community	Permission	Description		
1.***	public	ReadWrite			
2.***	public	No Access			
3.***	public	No Access			
4.***	public	No Access			
5.***	public	No Access			
6.***	public	No Access			
7.***	public	No Access			
8.***	public	No Access			
Trap Notification					
Receiver IP Address	Community	Severity	Acceptance	Description	Events
	public	Information	No		Select
	public	Information	No		Select
	public	Information	No		Select
	public	Information	No		Select
	public	Information	No		Select
	public	Information	No		Select
	public	Information	No		Select
	public	Information	No		Select
<input type="button" value="Apply"/> <input type="button" value="Reset"/>					

Fig. 14-SNMP Screen

UPS Events	
<input checked="" type="checkbox"/>	Schedule Shutdown Event
<input checked="" type="checkbox"/>	UPS Load Overrun
<input checked="" type="checkbox"/>	UPS Communication Lost
<input checked="" type="checkbox"/>	Turn Off UPS
<input checked="" type="checkbox"/>	AC Power Failed
<input checked="" type="checkbox"/>	UPS Battery Low
ENV Events	
<input checked="" type="checkbox"/>	Smoke Alarm
<input checked="" type="checkbox"/>	DiDo Alarm
<input checked="" type="checkbox"/>	MiMo01 Alarm
<input checked="" type="checkbox"/>	Environmental Temperature Overrun
<input checked="" type="checkbox"/>	Environmental Temperature Underrun
<input checked="" type="checkbox"/>	Environmental Humidity Overrun
<input checked="" type="checkbox"/>	Environmental Humidity Underrun
<input type="button" value="Select All"/> <input type="button" value="Clear All"/> <input type="button" value="Apply"/>	

Fig. 15-Event Screen

4-5. Configuration: Email

This screen is for setting up email notifications (Fig. 16). The email can be set-up for specific email receivers when a specified event occurs.

1. Email Setting:

This section is to set the SNMP-32 card's email Server.

A. Sender's Email Address:

This section is to set the sender's email address.

B. Email Server Requires Authentication:

This section is to set whether the email Server requires authentication.

C. Account Name:

This section is to set an email account name when the email server requires authentication.

D. Password:

This section is to set a password when the email server requires authentication.

E. Send Email When an Event Occurs:

This section is to set the SNMP-32 card to send an email when an event occurs.

2. Recipient's Email Address (for Event Log):

This section is to set the email addresses for the recipients to receive an email when an event occurs. There can be up to eight recipients.

A. Event:

This section is to select which events for the recipients to receive an email. Clicking on Select will open a Select Events List.

3. Recipient's Email Address (for Daily Report):

This section is to set the email addresses for the recipients to receive a Daily Report of the occurred events. There can be up to four recipients.

A. Send Email for Daily Report (Format: hh:mm:ss):

This section is to set a particular time for the Daily Reports to be emailed.

Email		
Email Setting		
Email Server	<input type="text"/>	
Sender's Email Address	<input type="text"/>	
Email Server Requires Authentication	NO <input type="button" value="v"/>	
Account Name	<input type="text"/>	
Password	<input type="text"/>	
Send Email When Event Occurs	NO <input type="button" value="v"/>	
Recipient's Email Address (for Event Log)		
No.	Email Address	Events Selection
Account 1	<input type="text"/>	<input type="button" value="Select"/>
Account 2	<input type="text"/>	<input type="button" value="Select"/>
Account 3	<input type="text"/>	<input type="button" value="Select"/>
Account 4	<input type="text"/>	<input type="button" value="Select"/>
Account 5	<input type="text"/>	<input type="button" value="Select"/>
Account 6	<input type="text"/>	<input type="button" value="Select"/>
Account 7	<input type="text"/>	<input type="button" value="Select"/>
Account 8	<input type="text"/>	<input type="button" value="Select"/>
Recipient's Email Address (for Daily Report)		
No.	Email Address	
Account 1	<input type="text"/>	
Account 2	<input type="text"/>	
Account 3	<input type="text"/>	
Account 4	<input type="text"/>	
Send Email for Daily Report (hh:mm:ss)	NO <input type="button" value="v"/> at <input type="text"/>	
<input type="button" value="Apply"/> <input type="button" value="Reset"/>		

Fig. 16-Email Screen

4-6. Configuration: PPP

This screen is to set the PPP dial-up information for the external modem (Fig. 17).

PPP	
PPP Dial-in	
Login Name	<input type="text"/>
Login Password	<input type="text"/>
PPP Server IP	10.0.0.1
Login IP	10.0.0.2
Modem Script	\N AT&KDM1S0=1 OK \N
Apply Reset	

Fig. 17-PPP Screen

4-7. Configuration: Web/Telnet

This screen is to set-up the User Account information for Web/Telnet (Fig. 18).

1. User Account

- A. User Name:
This section is to set a user name for the SNMP-32 card's Web pages. There can be up to up to eight users. The users have to input the user name and password to view the Web pages.
- B. Password:
This section is to set a password for the SNMP-32 card's Web pages. The users have to input the password and the user name to view the Web pages.
- C. Permission:
This section is to set the specified user's authorizations of Read, or Read/Write.
- D. IP Filter:
This section is to set a specific IP address for a certain user. This user can only view the Web pages from the specified IP address. If you want the specified user to view the Web pages from any IP address, you can set the IP Filter to *.*.*.*.

Web/Telnet			
User Account			
User Name	Password	Permission	IP Filter
<input type="text"/>	<input type="text"/>	Read/Write	****
<input type="text"/>	<input type="text"/>	Read/Write	****
<input type="text"/>	<input type="text"/>	Read/Write	****
<input type="text"/>	<input type="text"/>	Read/Write	****
<input type="text"/>	<input type="text"/>	Read/Write	****
<input type="text"/>	<input type="text"/>	Read/Write	****
<input type="text"/>	<input type="text"/>	Read/Write	****
<input type="text"/>	<input type="text"/>	Read/Write	****
Apply Reset			

Fig. 18-Web/Telnet Screen

4-8. Configuration: System Time

This screen is to set the SNMP-32 card's system time (Fig. 19).

1. Internet Time Setting

- A. Time Between Automatic Updates:
This section is to set a time interval between automatic updates.
- B. Primary Time Server:
This section is to set a Primary Time Server for the SNMP-32 card.
- C. Secondary Time Server:
This section is to set a Secondary Time Server for the SNMP-32 card.
- D. Time Zone (Relative to GMT):
This section is to set the correct time zone for different countries.

2. System Time (Format: mm/dd/yyyy hh:mm:ss):

This section is to set the system time manually for the SNMP-32 card.

System Time	
Internet Time Setting	
Time Between Automatic Updates	1 Hour
Primary Time Server	128.118.46.3
Secondary Time Server	128.250.36.2
Time Zone (Relative to GMT)	GMT+8:00
Apply Reset	
System Time	
System Time (mm/dd/yyyy hh:mm:ss)	09/30/2003 13:55:35
Apply Reset	

Fig. 19-System Time Screen

4-9. Log Information: Event

1. Event Log

This screen shows a log of events for the connected device (Fig. 20). The log displays the Date/Time of the event, the connected device and a description of the event. The SNMP-32 card can log up to 500 events. When the 500 event limit is reached SNMP-32 card will delete the earliest event record and continue logging new events. The following are the Event list for each connected device.

UPS Event List:

- Schedule Shutdown Event
- UPS Load Overrun
- UPS Communication Lost
- Turn Off UPS
- AC Power Failed
- UPS Battery Low

RPM Event List:

- RPM Communication Lost
- Outlet On
- Outlet Off
- Outlet Reboot
- Outlet Fault

ENV Event List:

- Environmental Temperature Overrun
- Environmental Temperature Underrun
- Environmental Humidity Overrun
- Environmental Humidity Underrun

CPS Event List:

- CPS Communication Lost
- Current Out of Threshold 1
- Current Out of Threshold 2

ATS Event List:

- Switch Input Power

Event Log		
Date/Time	Device	Event
10/06/2003 06:21:40	UPS	The UPS passed its internal self-test.
1		

Fig. 20-Event Log Screen

2. Save Event Log

This function is to save the current event log to another file for maintaining an Event Log History (Fig. 21).

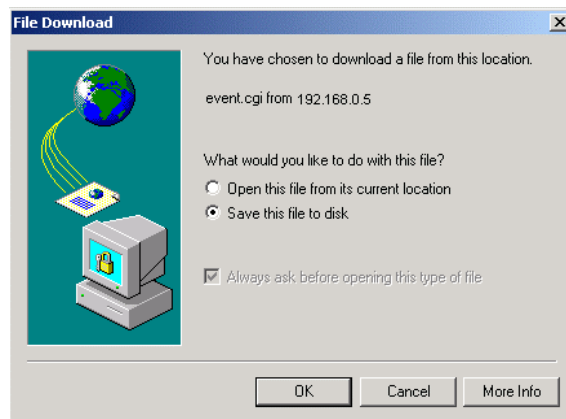


Fig. 21-Save Event Log Screen

4-10. Log Information: Data

1. Data Log

This screen shows the Data log for the connected UPS (Fig. 22). The log displays the Date/Time, Input Voltage, Output Voltage, Input Frequency (Hz), Output Loading (%), Battery Capacity (%), and the Battery Temperature. The SNMP-32 card can log up to 500 events. When the 500 event limit is reached SNMP-32 card will delete the earliest log record and continue logging new Data.

Data Log						
Date/Time	Input Volt.	Output Volt.	Freq. (Hz)	Loading	Capacity	Temp.
09/30/2003 08:28:45	113.0	113.0	60.0	20	100	29.0C 84.2F
09/30/2003 08:27:38	113.0	113.0	60.0	20	100	29.0C 84.2F
09/30/2003 08:26:32	113.0	113.0	60.0	20	100	29.0C 84.2F
09/30/2003 08:25:25	113.0	113.0	60.0	20	100	29.0C 84.2F
09/30/2003 08:24:19	113.0	113.0	60.0	20	100	29.0C 84.2F
09/30/2003 08:23:12	113.0	113.0	60.0	20	100	29.0C 84.2F
09/30/2003 08:22:06	113.0	113.0	60.0	20	100	29.0C 84.2F
09/30/2003 08:21:00	113.0	113.0	60.0	20	100	29.0C 84.2F
09/30/2003 08:19:53	113.0	113.0	60.0	21	100	29.0C 84.2F
09/30/2003 08:18:47	113.0	113.0	60.0	21	100	29.0C 84.2F
09/30/2003 08:17:40	113.0	113.0	60.0	21	100	29.0C 84.2F
09/30/2003 08:16:34	113.0	113.0	60.0	20	100	29.0C 84.2F
09/30/2003 08:15:27	113.0	113.0	60.0	22	100	29.0C 84.2F
09/30/2003 08:14:21	113.0	113.0	60.0	21	100	29.0C 84.2F
09/30/2003 08:13:15	113.0	113.0	60.0	20	100	29.0C 84.2F

Fig. 22-Data Log Screen

2. Save Data Log

This function is to save the current event log to another file for maintaining a Data Log History (Fig. 23).

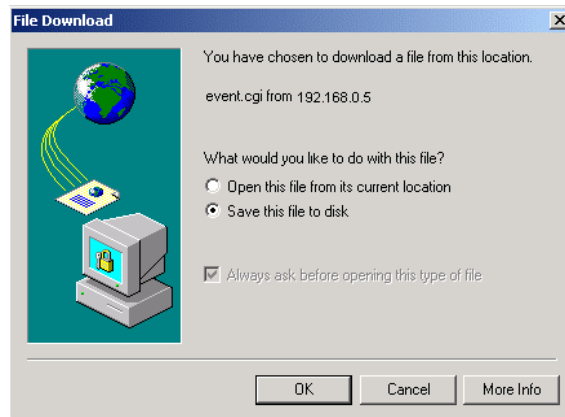


Fig. 23-Save Event Log Screen

5. Firmware Upgrade Procedure

This section will guide you through the Firmware Upgrade Procedure of the SNMP-32 Card.

1. Open the 'SNMP Utility' group in the Windows 'Start' → 'Program Group'.
2. Click "SNMP Utility" to initiate the SNMP Utility program (Fig. 24).



Fig. 24-SNMP Utility Group

3. Once the SNMP Utility has been opened, the SNMP Utility will search for the network adapter automatically, or, click on Network Selection from the main page. The screen will display the network adapter that was located. Click on the network adapter, and then press "OK" to return to the main page of SNMP Utility (Fig. 25).

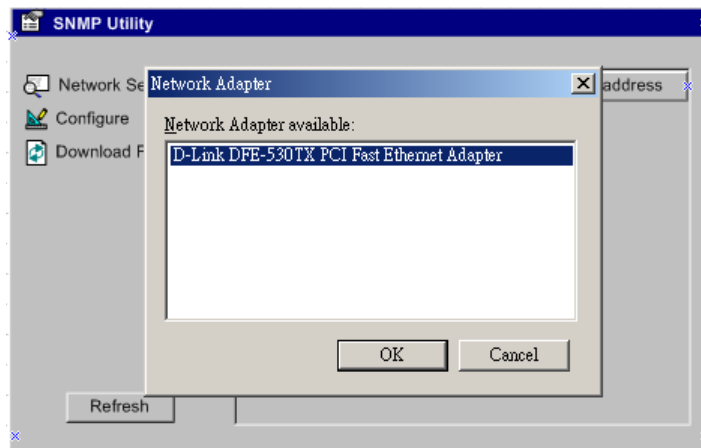


Fig. 25-SNMP Utility: Network Selection

4. The SNMP Utility will then search for and display all of the SNMP-32 cards that are on your LAN. Select the appropriate SNMP-32 card on the right side of the screen, and then click "Download Firmware" (Fig. 26).

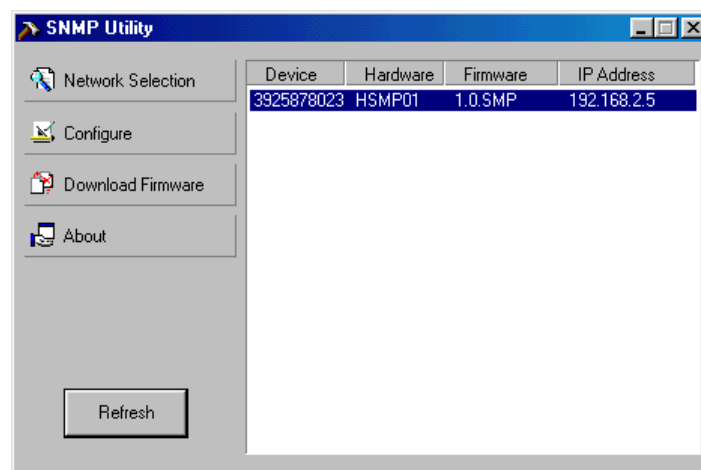



Fig. 26-SNMP Utility: Configuration Menu

5. Click , and then browse for the location of the new firmware file. Select the new firmware file (*.bin) and press “Start”. The SNMP-32 card’s Red and Yellow LEDs will flash alternately, meaning the firmware upgrade is in process (Fig. 27).

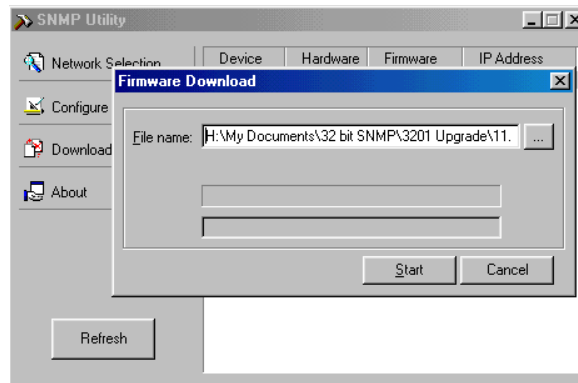


Fig. 27-SNMP Utility: Download Firmware

6. Once the Firmware Upgrade is complete, the SNMP-32 card will auto reboot (Fig. 28). Click “Cancel”, and then close the SNMP Utility program. The SNMP-32 card is ready for normal operation.

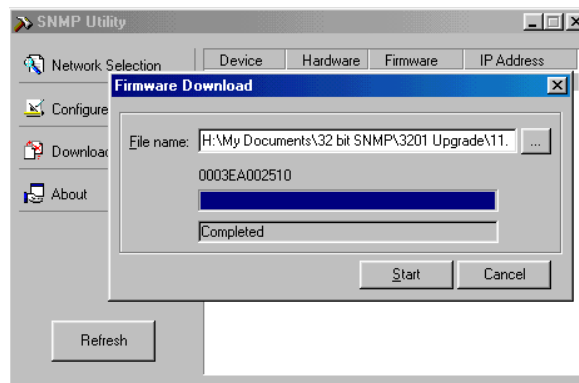


Fig. 28-SNMP Utility: Download Firmware Complete

6. Telnet

6-1. Telnet Configuration

This section will guide you through the Telnet Configuration of the SNMP-32 Card.

1. Select “Start” from Windows, click “Run”, then input Telnet and the SNMP-32 card’s IP Address. Then click “OK” (Fig. 29).

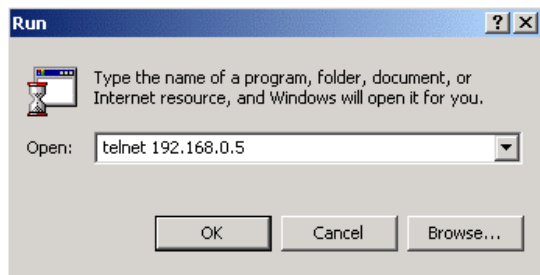


Fig. 29-Telnet: Startup

2. Telnet connection successful (Fig. 30). Press any key to continue.

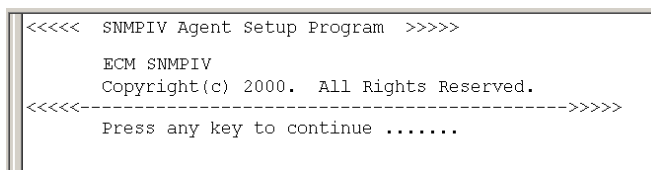


Fig. 30-Telnet: Connection

3. If you entered a User Name and a Password, enter them now. If you did not enter a User Name and a Password, hit enter (Fig. 31).

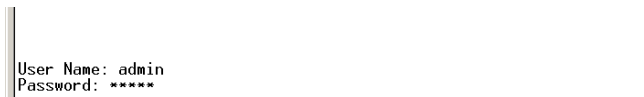


Fig. 31-Telnet: Login

4. Telnet Main Menu screen (Fig. 32).

```
<<<<                Main Menu                >>>>
<<<<----->>>>
1. Set IP Address.
2. Set SNMP MIB System.
3. Set SNMP Access Control.
4. Set SNMP Trap Notification.
5. Set UPS Properties.
6. Set UPS Devices Connected.
7. Set System Time & Time Server.
8. Set Web and Telnet User Account.
9. Set E-mail.
  a. Reset Configuration to Default.
  b. Set Environment Group.
  c. Save & Reboot.
0. Exit Without Saving.

Select => _
```

Fig. 32-Telnet: Main Menu

- **Set IP Address**
This function is for setting the IP Address, the Gateway Address, and the Subnet Mask.
- **Set SNMP MIB System**
This function is for setting the MIB System Group parameters.
- **Set SNMP Access Control**
This function is for setting the IP Manager, the Community String, and the Access Permission.
Note: The configuration of 'Set SNMP Access Control' is only used for SNMP Network Manager.
- **Set SNMP Trap Notification**
If you want to use a PC and perform the 'Trap' function of the SNMP manager to manage the RPM through SNMP-32 card, the IP address of the PC must be added in this list of SNMP-32 card.
Note: The configuration of 'Set SNMP Trap Receiver' is only used for SNMP Network Manager.
- **Set System Time & Time Server**
This function is for setting the System Date, and the System Time.
- **Set Web and Telnet User Account**
This function is for setting the user's account authorization.
- **Set Email**
This function is for setting the email accounts to receive power event notification.
- **Reset Configuration to Default**
This function is for setting all values to their default settings.
- **Save & Reboot**
This function is for saving the current configuration (including any/all changes that were made) and then rebooting the SNMP-32 card.
- **Exit Without Saving**
This function is for exiting the configuration setup without saving any/all changes that were made.

7. Connected Device

7-1. Uninterruptible Power Supply (UPS)

This section will guide you through the SNMP-32 card's UPS Web pages. See section 2, Installation Procedure, for installing the SNMP-32 card in the UPS.

1. UPS Information

This screen shows the basic UPS information (Fig. 33). The UPS provides the values shown, or they are user settings from the Configuration pages.

UPS Information

The UPS provides the following information: the Manufacturer, the Firmware Version, and the Model.

Battery Information

The UPS provides the values shown, or they are user settings from the Configuration pages.

Rating Information

The UPS provides the values shown, or they are user settings from the Configuration pages.

UPS Information	
UPS Information	
UPS Information	Minuteman
UPS Firmware Version	0.18
Serial Model	E 1500
Battery Information	
Last Battery Replaced Date	11/24/2003
Rating Information	
Voltage Rating	113.0V
Frequency Rating	60.0Hz
Misc. Information	
UPS Next Self Test	--
UPS Last Self Test	--

Fig. 33-UPS Information Screen

2. UPS Status

This screen shows the UPS's current status (Fig. 34). The users can choose a time interval from the drop-down box to refresh the status information.

UPS Status

This section is to show the UPS power status. The abnormal status will be displayed (in red) when there is an abnormal power event.

Input Status

This section is to show the UPS input status (AC Status/Input Voltage/Input Frequency). The values will be shown in red when an abnormal condition occurs.

Output Status

This section is to show the UPS output status (Output Voltage/Output Status/UPS Loading). The values will be shown in red when an abnormal condition occurs.

Battery Status

This section is to show the UPS Battery Status (Temperature/Battery Status/Battery Capacity/Battery Voltage/Time on Battery). The values will be shown in red when an abnormal condition occurs.

UPS Status	
UPS Status	UPS Normal
Refresh Status every	10 seconds ▾
Input Status	
AC Status	Normal
Input Line Voltage	121.0 V
Input Max. Line Voltage	122.0 V
Input Min. Line Voltage	120.0 V
Input Frequency	60.0 Hz
Output Status	
Output Voltage	121.0 V
Output Status	On line
UPS Loading	0 %
Battery Status	
Temperature	22.0C (71.6F)
Battery Status	Battery Normal
Battery Capacity	100 %
Battery Voltage	26.6 V
Time On Battery	00:00:00

Fig. 34-UPS Status Screen

3. UPS Control

This screen is to provide remote UPS test functions (Fig. 35). Choose the test item and click on 'Apply' to execute the test.

Quick Battery Test

The Quick Battery Test function will test the battery for 5-seconds.

General System Test

The General System Test function will test the UPS and the battery for-15 seconds. This test can only be performed when the battery is fully charged.

Deep Battery Calibration

The Deep Battery Calibration function will test the UPS and the Battery until Low Battery Warning (LBW). When this test is performed, the UPS will switch to the battery mode and operate until the Low Battery Warning alarm occurs. Then the UPS will switch back to the normal AC mode.

Cancel Test

The Cancel Test function is to abort a test while the test is in progress.

Shutdown UPS (Battery mode only)

Selecting 'Shutdown UPS' will turn off the UPS. This function can only be performed in the battery mode. The UPS will automatically restart when AC returns.

Put UPS in Sleep mode for XX minutes

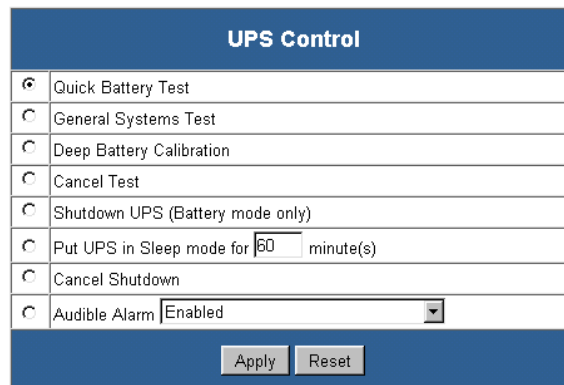
When the UPS is in the Sleep mode, it will not provide power to the outlets. The UPS will restart once the Sleep mode function is complete.

Cancel Shutdown

The Cancel Shutdown function is to abort a shutdown while a shutdown is in progress.

Audible alarm

- Disabled: Turn off the audible alarm.
- Enabled: Turn on the audible alarm.
- Muted: Mute the audible alarm until an event occurs (Fault, LBW).
- Disabled Until Low Battery Warning: Turn off the audible until a Low Battery Warning occurs.



The screenshot shows a web interface titled "UPS Control". It features a list of control functions, each with a radio button. The "Audible Alarm" option is currently set to "Enabled" via a dropdown menu. At the bottom, there are "Apply" and "Reset" buttons.

UPS Control	
<input checked="" type="radio"/>	Quick Battery Test
<input type="radio"/>	General Systems Test
<input type="radio"/>	Deep Battery Calibration
<input type="radio"/>	Cancel Test
<input type="radio"/>	Shutdown UPS (Battery mode only)
<input type="radio"/>	Put UPS in Sleep mode for <input type="text" value="60"/> minute(s)
<input type="radio"/>	Cancel Shutdown
<input type="radio"/>	Audible Alarm <input type="text" value="Enabled"/>

Fig. 35-UPS Control Screen

4. Graphic View

This screen displays the Temperature, the Capacity, the Load, the Voltage, etc of the UPS (Fig. 36). The three bar graphs are Output Voltage, Output Load, and Input Voltage.

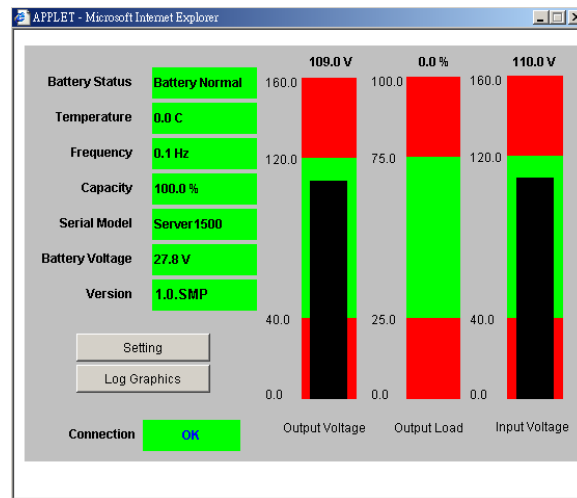


Fig. 36-Graphic View Screen

Clicking on the “Setting” button, the user can set the Upper Threshold and the Lower Threshold for the Output Voltage, the Output Load, and the Input Voltage (Fig. 37).

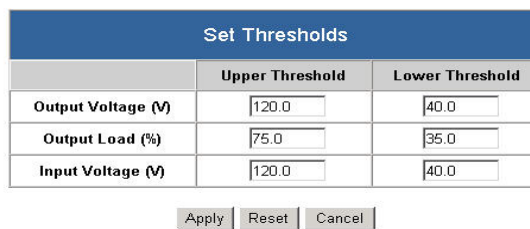


Fig. 37-Set Thresholds Screen

Clicking on the “Log Graphics” button, the user can observe the Input Voltage, Output Voltage, Frequency, Loading, Capacity, and Temperature appearing within the X-Y coordinates (Fig. 38).

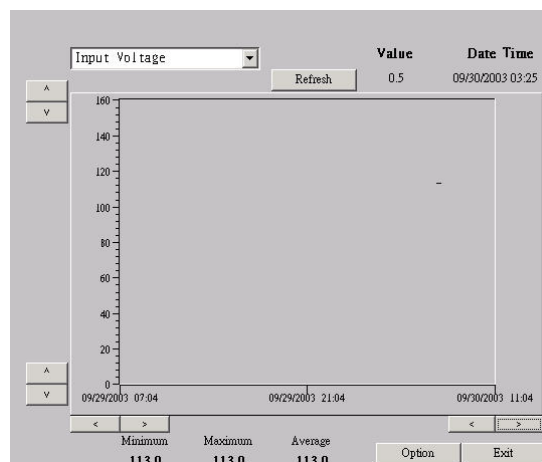


Fig. 38-Log Graphics Screen

5. UPS Settings

This screen is for the user to input information about the UPS (Fig. 39).

UPS Properties

The user can input the date of the last time the battery was replaced.

UPS Recorded

The user can set the time interval to log UPS Data.

Test UPS

The user can set the time interval for the UPS to perform a test.

Warning Threshold Value

Time Out of Connection Lost: The user can set the time interval for a warning of a lost connection.

Critical Loading: The user can set the warning threshold for an Overload condition.

UPS Settings	
UPS Properties	
Last Battery Replaced Dated (mm/dd/yyyy)	11/24/2003
UPS Recorded	
UPS Data Log	1 minute
Test UPS	
Test UPS for every	None
Test UPS on Weekday	Monday
Time of UPS Testing (hh:mm)	
Warning Threshold Value	
Time Out of Connection Lost	30 seconds
Critical Loading (%)	80
Apply Reset	

Fig. 39-UPS Settings Screen

6. UPS Schedule

This screen allows the user to schedule a shutdown and a restart of the UPS (Fig. 40). To add a new schedule, select the "New" button. To make changes to a current schedule, select [Edit]. To remove a schedule, select [Delete].

UPS Schedule			
Date	Time	Action	Modify
Every Monday	15:00	Shutdown	[Edit] [Delete]
New			
Warning will be initiated 10 minutes before Schedule Shutdown Event			
Apply Reset			

Fig. 40-UPS Schedule Screen

After selecting the “New” button or [Edit], the following page will appear (Fig. 41). Select the desired shutdown and restart configuration and then click the “Save” button.

- Date: Input the date for the event to occur.
- Time: Input the time for the event to occur on the specified date.
- UPS Action: If Shutdown is selected, the UPS will shutdown, but will not restart automatically. If Shutdown with Restart is selected, the UPS will shutdown and then restart after XX number of seconds.

Fig. 41-New Schedule Event Screen

7. RPM Action

This screen provides the interface to set the Remote Power Manager (RPM) to do a specific action when the UPS or the ENV’s specified event occurs (Fig. 42).

Note: This function is only supported when the UPS or ENV is connected to the RPM.

Fig. 42-RPM Action Screen (1)

After selecting the “New” button the following page will appear (Fig. 43).

- Events Select: The user can select which event to start the Action.
- Events Action: The user can select to perform the Action when the event occurs or when the event is removed.
- RPM: The user can select which RPM to perform the Action.
- Outlet: The user can select which outlet to perform the Action.
- Outlet Action: The user can select to turn on the RPM’s outlet or turn off the RPM’s outlet.

Fig. 43-RPM Action Screen (2)

NOTE: RPM/UPS setup:

1. Plug the RPM’s power cord into the output of the UPS.
2. Install the SNMP-32 card into the RPM.
3. Install the RPM/UPS Interface card into the UPS.
4. Connect one end of the iLink cable to the iLink port on the RPM.
5. Connect the other end of the iLink cable to the iLink port on the RPM/UPS Interface card.

7-2. Remote Power Manager (RPM)

This section will guide you through the SNMP-32 card's RPM Web pages. See the RPM User's Manual for installation instruction.

1. RPM Status (Fig. 44)

Select RPM

Select which RPM to view and control (RPM01-RPM16).

Outlet A-H

Name the outlet. The user can rename each individual outlet (see RPM Setting screen).

Outlet Control

Non-Internet: The outlet can only be controlled locally by the front panel control buttons. The outlets cannot be controlled via the Web page.

Instant Shutdown: The outlet can only be controlled via the Web page. The outlet can be turned on/off instantly by clicking on the outlet icon.

Safe Shutdown: The outlet can only be controlled via the Web page. The outlet will be turned off after XX number of seconds by clicking on the outlet icon (see RPM Setting screen).

Safe Reboot: The outlet can only be controlled via the Web page. The outlet will be turned on (reboot) after XX number of seconds (see RPM Setting screen).

On/Off

This is the current state of the outlet, on/off.

Outlet Icon

Clicking on the Outlet Icon will change the state of the outlet (on/off). If the Outlet Icon is yellow, the outlet is on. If the Outlet Icon is white, the outlet is off.

All On Button

Clicking on the All On button will turn all of the outlets on, when the outlets are setup for Internet control.

All Off Button

Clicking on the All Off button will turn all of the outlets off, when the outlets are setup for Internet control.

iSWITCH					
Click the icon to turn on or off the specific outlet					
Select RPM:			RPM04		
OutletA instantShutdown	ON		OutletE non-internet	OFF	
OutletB instantShutdown	ON		OutletF non-internet	OFF	
OutletC instantShutdown	ON		OutletG non-internet	OFF	
OutletD instantShutdown	ON		OutletH non-internet	OFF	
All On					
All Off					

Fig. 44-RPM Status Screen

2. RPM Setting (Fig. 45)

Select RPM

Select the appropriate RPM to configure (RPM01-RPM16).

Address Change

Change the RPM's ID. The factory default setting is RPM00, which is not configurable. The user must change the RPM's ID to RPM01 through RPM16.

Identification

The user can rename the RPM.

Outlet

Outlet Identification.

Name

The user can rename the individual outlets.

Phone controllable

The user can configure each outlet to be telephone controllable.

Control Type

- Instant Shutdown: When the outlet is turned off, the outlet will shutdown immediately.
- Safe Shutdown: When the outlet is turned off, there will be a time delay (before the outlet turns off) according to the value in the "Power Off Delay" field.
- Safe Reboot: When the outlet is turned off, there will be a time delay (before the outlet turns on again) according to the value in the "Power Resume Delay" field.

Power off Delay

There will be a time delay before the outlet turns off according to the value in this field.

Power Resume Delay

There will be a time delay before the outlet turns on according to the value in this field.

RPM Setting					
Select RPM	RPM01				
Address Change	RPM RPM01				
Identification	iSWITCH				
Outlet	Name	Phone Controllable	Control Type	Power Off Delay	Power Resume Delay
A	OutletA	YES	instant shutdown	300 sec	1 sec
B	OutletB	YES	instant shutdown	300 sec	2 sec
C	OutletC	YES	instant shutdown	300 sec	3 sec
D	OutletD	YES	instant shutdown	300 sec	4 sec
E	OutletE	YES	instant shutdown	300 sec	5 sec
F	OutletF	YES	instant shutdown	300 sec	6 sec
G	OutletG	YES	instant shutdown	300 sec	7 sec
H	OutletH	YES	instant shutdown	300 sec	8 sec
<input type="button" value="Apply"/> <input type="button" value="Reset"/>					

Fig. 45-RPM Setting Screen

3. RPM Schedule

This screen is for scheduling the RPM's outlets to perform a specific Action (Fig. 46). To add a new schedule, select the "New" button. To make changes to the current schedule, select **[Edit]**. To remove a schedule, select **[Delete]**.

RPM Schedule						
Date	Time	RPM	Outlet	Action	Modify	
Once 09/27/2003	14:00	RPM02	OutletA	ON	[Edit]	[Delete]
<input type="button" value="New"/>						
<input type="button" value="Apply"/> <input type="button" value="Reset"/>						

Fig. 46-RPM Schedule Screen

After selecting the "New" button or **[Edit]**, the following screen will appear (Fig. 47). Select the desired shutdown and restart configuration and then click the **Save** button.

- RPM: The user can select which RPM to perform the Action (RPM01-RPM16).
- Outlet: The user can select which outlet to perform the Action.
- Outlet Action: The user can select to turn on the RPM's outlet or turn off the RPM's outlet.
- Date: The user can configure the RPM to perform the Action 'Once' on the specified date (format: mm/dd/yyyy) or the RPM can be configured to perform the Action 'Every' week on the specified day.
- Time: The user can select the time of day to perform the Action (format: 24-hour).

New Schedule Event	
RPM	<input type="text" value="RPM02"/>
Outlet	<input type="text" value="OutletA"/>
Outlet Action	<input checked="" type="radio"/> ON <input type="radio"/> OFF
Date(mm/dd/yyyy)	<input checked="" type="radio"/> Once: <input type="text" value="09/27/2003"/> <input type="radio"/> Every: <input type="text" value="Monday"/>
Time(hh:mm)	<input type="text" value="14:00"/>
<small>Please check the RPM configuration for the RPM outlet action type: 1. Instant shutdown. 2. Safe shutdown. 3. Safe reboot.</small>	
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

Fig. 47-New Schedule Event Screen

7-3. Current Probe Sensor (CPS)

This section will guide you through the SNMP-32 card's CPS Web pages. See the CPS User's Manual for installation instruction.

1. CPS Status (Fig. 48)

This screen shows the electrical current detected by CPS and indicates if the current is out of the preset range.

CPS Status		
Item	value (amp)	status
CPS01	N/A	N/A
CPS02	N/A	N/A
CPS03	N/A	N/A
CPS04	N/A	N/A
CPS05	N/A	N/A
CPS06	N/A	N/A
CPS07	N/A	N/A
CPS08	N/A	N/A
CPS09	N/A	N/A
CPS10	N/A	N/A
CPS11	N/A	N/A
CPS12	N/A	N/A
CPS13	N/A	N/A
CPS14	N/A	N/A
CPS15	N/A	N/A
CPS16	N/A	N/A

Fig. 48-CPS Status Screen

2. CPS Configuration (Fig. 49)

Name

The user can rename the CPS.

Threshold 1

The user can set the out-of-tolerance value for the first phase.

Threshold 2

The user can set the out-of-tolerance value for the second phase.

CPS Configuration			
Item	Name	Threshold 1 > 0.0 amp	Threshold 2 < 999.9 amp
CPS01	CPS01	600.0	999.9
CPS02	CPS02	600.0	999.9
CPS03	CPS03	600.0	999.9
CPS04	CPS04	600.0	999.9
CPS05	CPS05	600.0	999.9
CPS06	CPS06	600.0	999.9
CPS07	CPS07	600.0	999.9
CPS08	CPS08	600.0	999.9
CPS09	CPS09	600.0	999.9
CPS10	CPS10	600.0	999.9
CPS11	CPS11	600.0	999.9
CPS12	CPS12	600.0	999.9
CPS13	CPS13	600.0	999.9
CPS14	CPS14	600.0	999.9
CPS15	CPS15	600.0	999.9
CPS16	CPS16	600.0	999.9

Note: The value of threshold 1 must be less than threshold 2.

Apply Reset

Fig. 49-CPS Configuration Screen

7-4. Temp/Hum32-Probe (ENV)

This section will guide you through the SNMP-32 card's ENV Web pages. See the Temp/Hum32-Probe User's Manual for installation instruction.

1. ENV Status (Fig. 50)

This screen shows the temperature and the humidity detected by ENV. The user can select the time interval for refreshing the ENV Status screen. When there is an environmental condition that is out-of-tolerance, it will appear in red.

ENV Status	
Refresh Status every	10 seconds ▾
Item	Status
Environment Temperature	31.6C
Environment Humidity	49 %

Fig. 50-ENV Status Screen

2. ENV Configuration (Fig. 51)

The user can define the out-of-tolerance range for the temperature and the humidity. If the temperature or humidity exceeds the out-of-tolerance range, the SNMP-32 card can be configured to perform an action, such as email, sending traps, or trigger the RPM to control the power.

ENV Configuration		
Item	Critical Under Run	Critical Over Run
Humidity (%)	5	90
Temperature (c)	5.0	70.0

Fig. 51-ENV Configuration Screen

7-5. Automatic Transfer Switch (ATS)

This section will guide you through the SNMP-32 card's ATS Web pages. See the ATS User's Manual for installation instruction.

1. ATS Status (Fig. 52)

This screen is to show which Input Power Source is being used. Clicking on the "ICON" can switch the input power source from Input Power Source A to Input Power Source B.

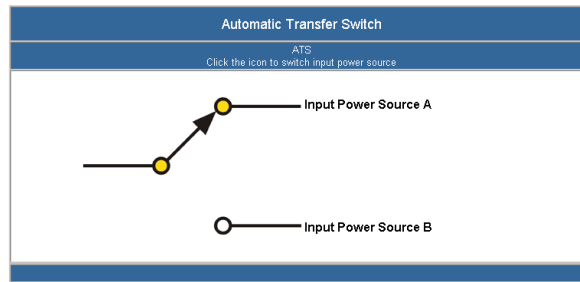


Fig. 52-Automatic Transfer Switch Screen

2. ATS Configuration (Fig. 53)

Identification

The user can define the name of the ATS.

Input Power Source A

The user can define the name of the Input Power Source A.

Input Power Source B

The user can define the name of the Input Power Source B.

ATS Configuration	
Identification	<input type="text"/>
Input Power Source A	<input type="text"/>
Input Power Source B	<input type="text"/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

Fig. 53-ATS Configuration Screen

8. Configuring the NMS

To complete the SNMP-32 card installation and configuration process, you must compile the necessary MIBs to configure the NMS.

Most NMS with a MIB compiler can manage the SNMP-32 card. For instructions on how to compile MIBs for the most popular NMS—HP OpenView Network Node Manager and SunConnect SunNet Manager, see the corresponding heading below.

General Network Management Stations

Follow these general procedures to configure an NMS:

1. Compile the device MIBs.
2. Add the SNMP-32 card object to the *Management Map*.
3. Ping the SNMP-32 card.

HP OpenView Network Node Manager for HP-UX

Compile the Device MIB

1. Copy the UPS MIB file from the TAR formatted diskette into the subdirectory `/usr/OV/snmp_mibs`.
2. From the main menu, select **Options**
3. Load/Unload **MIBs: SNMP...**
4. Select **Load**.
5. Select the MIB file copied earlier.
6. Select **OK**.

Add the SNMP-32 card Object to the Management Map

1. Select the submap then **Edit: Add Object**.
2. Select the group computer.
3. With the middle (or opposite) mouse button, drag the generic symbol subclass device to the submap.
4. Enter a name for the object in the Selection and Label fields of the *Add Object* box.
5. Highlight **IP Map** from *Object Attributes* group.
6. Select Set Object Attributes button.
7. Enter Host name and IP address of SNMP-32 card adapter.
8. Enter **OK**.
9. Enter **OK** at *Add Object* menu.
10. Enter **OK** at *Add Object:palette*.

Poll the Device OIDs

1. From the main menu, select **Monitor: MIB** values then **Browse MIB: SNMP**.
2. Move around the MIBs to view the UPS device information.

Set the Device OIDs

1. From the main menu, select **Monitor: MIB** values then **Browse MIB: SNMP**.
2. Select a MIB variable you want to alter by clicking on it.
3. Enter the new value then click on **Set**.
4. Click on **Start Query** to view the changes.

Ping the SNMP-32 card

1. Change active Window to **Shell**.
2. Type ping <IP address> and press <enter>.

9. Appendix

This section discusses: Communities, Gateways, IP Addresses, and Subnet masking.

Communities

A community is a string of printable ASCII characters that identifies a user group with the same access privileges. For example, a common community name is “public.”

For security purposes, the SNMP agent validates requests before responding. The agent can be configured so that only trap managers that are members of a community can send requests and receive responses from a particular community. This prevents unauthorized managers from viewing or changing the configuration of a device.

Gateways

Gateway, also referred to as a router, is any computer with two or more network adapters connecting to different physical networks. Gateways allow for transmission of IP packets among networks on an Internet.

IP Addresses

Every device on an Internet must be assigned a unique IP (Internet Protocol) address. An IP address is a 32-bit value comprised of a network ID and a host ID. The network ID identifies the logical network to which a particular device belongs. The host ID identifies the particular device within the logical network. IP addresses distinguish devices on an Internet from one another so that IP packets are properly transmitted.

IP addresses appear in dotted decimal (rather than in binary) notation. Dotted decimal notation divides the 32-bit value into four 8-bit groups, or octets, and separates each octet with a period. For example, 199.217.132.1 is an IP address in dotted decimal notation.

To accommodate networks of different sizes, the IP address has three divisions—Classes A for large, B for medium, and C for small. The difference among the network classes is the number of octets reserved for the network ID and the number of octets reserved for the host ID.

Class	Value of First Octet	Network ID	Host ID	Number of Hosts
A	1-126	First octet	Last three octets	16,387,064
B	128-191	First two octets	Last two octets	64,516
C	192-223	First three octets	Last octet	254

Any value between 0 and 255 is valid as a host ID octet except for those values the InterNIC reserves for other purposes.

Value	Purpose
0, 255	Subnet masking
127	Loopback testing and interprocess communication on local devices
224-254	IGMP multicast and other special protocols

Subnetting and Subnet Masks

Subnetting divides a network address into sub-network addresses to accommodate more than one physical network on a logical network.

For example: A Class B company has 100 LANs (Local Area Networks) with 100 to 200 nodes on each LAN. To classify the nodes by its LANs on one main network, this company segments the network address into 100 sub-network addresses. If the Class B network address is 150.1.x.x, the address can be segmented further from 150.1.1.x through 150.1.100.x.

A subnet mask is a 32-bit value that distinguishes the network ID from the host ID for different sub-networks on the same logical network. Like IP addresses, subnet masks consist of four octets in dotted decimal notation. You can use subnet masks to route and filter the transmission of IP packets among your sub-networks. The value “255” is assigned to octets that belong to the network ID, and the value “0” is assigned to octets that belong to the host ID.

For the example above, if you want all the devices on the sub-networks to receive each other’s IP packets, set the subnet mask to 255.255.0.0. If you want the devices on a single sub-network only to receive IP packets from other devices on its own sub-network, set the subnet mask to 255.255.255.0 for the devices on that sub-network.

Subnet Mask	Routing and Filtering
0.0.0.0	IP packets are transmitted to all devices.
255.0.0.0	IP packets are only transmitted to devices that are IP that’s first octet matches the sender’s IP address’s first octet.
255.255.0.0	IP packets are only transmitted to devices that are IP that’s first two octets match the sender’s IP address’s first two octets.
255.255.255.0	IP packets are only transmitted to devices that are IP that’s first three octets match the sender’s IP address’s first three octets.

10. Troubleshooting

- Problem:** The NMS cannot ping the SNMP-32 card.
Solution: Make sure the network connection to the SNMP-32 card is good.
Solution: Make sure the cable is in good condition.
Solution: Make sure to set the Community String. Name the community with any lowercase name. A UPS monitors a designated community.
Solution: Make sure to set the Manager Table.
Solution: Make sure the Gateway is correct.
Solution: Make sure to Save after the Setup Procedure.
- Problem:** The internal SNMP-32 card will not communicate and the LEDs are not illuminated.
Solution: Make sure the UPS is turned ON.
Solution: Make sure this is not a scheduled shutdown.
- Problem:** The external SNMP-32 card will not communicate and the LEDs are not illuminated.
Solution: Make sure the UPS is turned ON.
Solution: Make sure that the external power adaptor is plugged into the UPS.
Solution: The power adaptor could be bad. Contact Tech Support.
Solution: Make sure this is not a scheduled shutdown.
- Problem:** The SNMP-32 card will not communicate and all of the LEDs are ON.
Solution: There has been a collision of the packets. The SNMP-32 card needs to be reset. Press the reset button on the SNMP-32 card for ten seconds and then release the reset button.
- Problem:** The user cannot change from one Web Page to the next.
Solution: There has been a collision of the packets. The SNMP-32 card needs to be reset. Press the reset button on the SNMP-32 card for ten seconds and then release the reset button.
- Problem:** I forgot my Supervisor's name/password.
Solution: The SNMP-32 card will need to be returned for repair. Contact Tech Support.

11. Obtaining Technical Assistance

For Technical Support on the Web, please visit the Support section of our Web site or visit our online Discussion Forum at www.minutemanups.com

In order to diagnose the problem you are having, our technicians need the following information from you.

Installation Site:

Company Name: _____

Address: _____

City: _____ State: _____ ZIP code: _____

Contact Person's Name: _____

Phone Number: _____

If you are a consultant,

Consultant Name: _____

Phone Number: _____ Fax Number: _____

Computer System:

Operating System and version: _____

System Manufacturer: _____

System Model Number: _____

NMS name and revision number: _____

UPS:

Model Name/Number: _____

Serial Number: _____

Type of SNMP Card (internal or external): _____

What are the symptoms?

Technical Support

Please have the information listed above ready when you contact us. You can reach us by calling:

Phone: 1-972-446-7363

Fax: 1-972-446-9011

12. Limited Product Warranty

LIMITED PRODUCT WARRANTY

Para Systems Inc. (Para Systems) warrants this equipment, when properly applied and operated within specified conditions, against faulty materials or workmanship for a period of three years from the date of original purchase by the end user. For equipment sites within the United States and Canada, this warranty covers repair or replacement of defective equipment at the discretion of Para Systems. Repair will be from the nearest authorized service center. Replacement parts and warranty labor will be borne by Para Systems. For equipment located outside of the United States and Canada, Para Systems only covers faulty parts. Para Systems products repaired or replaced pursuant to this warranty shall be warranted for the remaining portion of the warranty that applies to the original product. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

The warranty shall be void if (a) the equipment is damaged by the customer, is improperly used, is subjected to an adverse operating environment, or is operated outside the limits of its electrical specifications; (b) the equipment is repaired or modified by anyone other than Para Systems or Para Systems-approved personnel; or (c) has been used in a manner contrary to the product's operating manual or other written instructions.

Any technical advice furnished before or after delivery in regard to use or application of Para Systems's equipment is furnished without charge and on the basis that it represents Para Systems's best judgment under the circumstances, but it is used at the recipient's sole risk.

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